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Two New Records from the Bridger Middle Eocene of Tabernacle Butte, Wyoming

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The geology and vertebrate paleontology of the middle Eocene in the vicinity of Tabernacle Butte, Wyoming, have been described elsewhere by McGrew and others (McGrew, 1959). After that monograph was completed, Malcolm McKenna of the University of California kindly turned over to us for study a smaller collection made by him at and near the same localities. Although too late for inclusion in the monograph, several forms new to the fauna are being published in separate notes, of which this is the second. (See also Simpson, 1959). Included here are a new species of insectivore, with important possible phylogenetic bearings, and a carnivore new to this fauna but possibly referable to a known Bridgerian species.

INSECTIVORA
LEPTICTIDAE

Diacodon bridgeri,¹ new species

TYPE: A.M.N.H. No. 56032, right lower jaw with P_4 - M_3 . Collected by Malcolm McKenna and presented by him to the American Museum.

HYPODIGM: Type only.

HORIZON AND LOCALITY: Bridger, middle Eocene, in the vicinity of Tabernacle Butte, Wyoming; locality 6 of McGrew (1959).

DIAGNOSIS AND DESCRIPTION: A comparatively large Eocene leptictid, larger than previously named species of *Diacodon*. P_4 robust; paraconid

¹ For the pioneer Jim Bridger, for whom the Bridger Basin and hence indirectly the Bridger formation are also named.

somewhat blade-like; metaconid slightly smaller than protoconid; heel broad, well basined, but basin open between metaconid and entoconid; hypoconulid present but minute. Molar paraconids slightly lingual to midline, cuspidate-conical but connected to protoconid by small crest. Hypoconulids medial, hypoconulid of M_3 forming a distinct posterior projection. Anterior hypoconid crests relatively buccal. Measurements as in table 1.

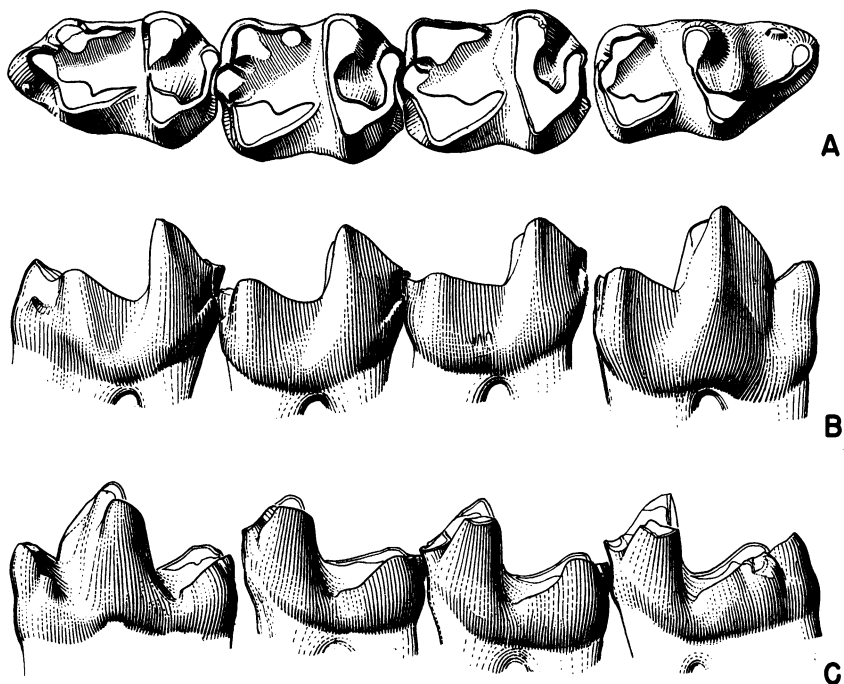


FIG. 1. *Diacodon bridgeri*, new species, type, A.M.N.H. No. 56032, right P_4 - M_3 . A. Crown view. B. External view. C. Internal view. $\times 7$.

DISCUSSION: Until the recent collecting at Tabernacle Butte, only a single specimen of a leptictid had been described from the middle Eocene. That specimen, made type of *Hypictops syntaphus* by Gazin (1949), is a maxilla, hence is not directly comparable with the present specimen. The individual was smaller than the type of *D. bridgeri*, although probably not so much as entirely to exclude the possibility of specific identity on the basis of size alone. The distinctive characters of *Hypictops* are mainly in P^3 , but P^4 - M^3 are also somewhat distinctive in (among other characters) being broad (anteroposteriorly) on the

lingual side. That would seem to require lower molars with short or somewhat squared trigonids. *Diacodon bridgeri* has molar trigonids as in typical *Diacodon*, not especially short or square. Gazin considered *Hypictops* as a probable relative and possible derivative of *Parictops*, named and described by Granger (1910) from the Wind River formation, Lost Cabin fauna, of the early Eocene. *Parictops* is poorly distinguished from *Diacodon*, but P_3 may be distinctive and congruent with P^3 of *Hypictops*, and the molar trigonids may, indeed, be relatively short, although this is uncertain on the basis of the unique, worn specimen.

There is thus no positive proof that *Diacodon bridgeri* is not the lower dentition of *Hypictops syntaphus*, but that is improbable.

McGrew (1959) has described two species of leptictids from Tabernacle Butte, nearly if not exactly contemporaneous with *D. bridgeri*. Those species, both placed by McGrew in *Diacodon*, are both definitely

TABLE 1
MEASUREMENTS (IN MILLIMETERS) OF TYPE OF *Diacodon bridgeri*

LM ₁₋₃	LP ₄ /WP ₄	LM ₁ /WM ₁	LM ₂ /WM ₂	LM ₃ /WM ₃
10.8	4.3/2.2	3.4/2.5	3.5/2.5	3.9/2.4

too small to be synonymous with *D. bridgeri* and also have various minor structural peculiarities as described by McGrew.

Among named early Eocene leptictids (see Matthew, 1918; Jepsen, 1930), *Diacodon bicuspis* is apparently closest to *D. bridgeri*. The type of the latter is larger than that of the former by about 15 per cent in length of lower molars. In itself that would not exclude specific identity, but several other specimens probably referable to *D. bicuspis* are also consistently smaller than the type of *D. bridgeri*, increasing the probability that the size difference does have specific value. *Diacodon bridgeri* also has a more blade-like paraconid on P_4 , more cuspidate paraconids on M_{1-3} , and probably has the anterior end of the hypoconid crest in a more buccal position. The two species are distinct with sufficient probability, but they are closely similar, and *D. bridgeri* could be a descendant of *D. bicuspis*.

In the late Eocene, only *Protictops* Peterson, 1934, calls for special comparison, and Peterson's description and figure show it as quite distinct from *D. bridgeri* or, indeed, most surely identified leptictids in

having a large antero-internal paraconid and the hypoconulid indistinct or absent. Its type species is much smaller than *D. bridgeri*.

Diacodon bridgeri differs from the Oligocene *Ictops* (or *Leptictis*), as do other species referred to *Diacodon*, in having the molar paraconids less conical and discrete and the hypoconulids more projecting posteriorly, especially on M_3 , along with lesser differences of doubtful significance. Nevertheless *D. bridgeri* is more like *Ictops* than is any other known middle or late Eocene leptictid, and it tends to fill the previous gap in knowledge of the lineage (if such it is) from early Eocene *Diacodon* to Oligocene *Ictops*.

CARNIVORA

MIACIDAE

Viverravus cf. *gracilis*

A.M.N.H. No. 56031, from "Misery Quarry" (University of California locality V-5628), about 150 yards southeast of locality 6 of Mc-

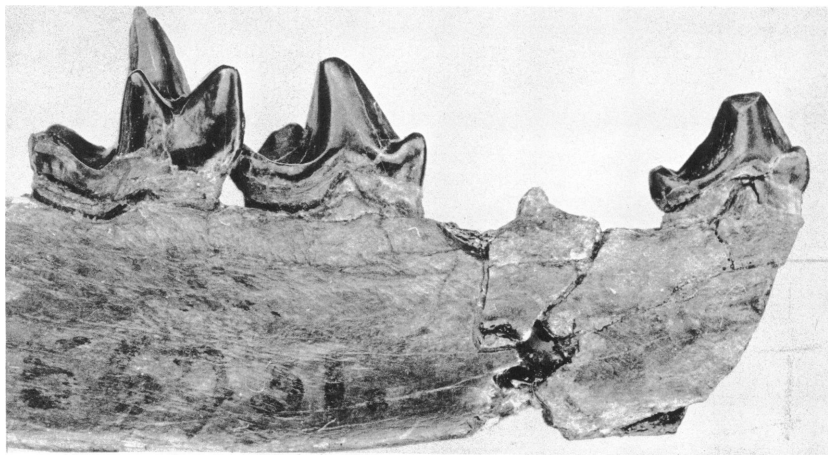


FIG. 2. *Viverravus* cf. *gracilis*. A.M.N.H. No. 56031, left lower jaw with P_2 , P_4 , and M_1 , internal view. $\times 4.5$.

Grew (1959), is a left lower jaw with P_2 , P_4 , and M_1 , and alveoli of P_3 and of the anterior root of M_2 . The structure agrees well with *Viverravus*, although the talonid of P_4 is slightly broader and more distinctly basined than in most specimens of that genus. In size the specimen is closest to *V. gracilis*. M_1 measures 6.3 by 3.7 mm. as against 4.5 by 3.4 mm. in the type, a considerable but not impossible difference for members of the same species. The type is probably a small variant, as it is distinctly below the mean for specimens referred

(principally by Matthew) to this species. In A.M.N.H. No. 12073, one of the largest of such specimens, the dimensions of M_1 are 6.0 by 3.2 mm., approaching the Tabernacle Butte specimen. Only further material could demonstrate whether the latter is an especially large (and otherwise somewhat variant) *V. gracilis* or is distinct.

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